

AMENDMENTS TO THE CLAIMS

Claims 1- 23 cancelled

24. (Presently Amended) An actuator system for use in a flusher, comprising:
an actuator including an armature and a coil constructed to displace said armature by application of a coil drive to control operation of an automatic battery-powered flusher;
an armature sensor constructed to detect displacement of said armature;
an external object sensor connected to provide signal to a microcontroller
a battery; and
a control circuit including a valve driver powered by said battery and constructed to apply to said coil said coil drive, said control circuit being controlled by said microcontroller that initiates application of said coil drive upon receiving a signal originated from said [[an]] external object sensor, said control circuit being also responsive to an output from said armature sensor to control duration of said coil drive.

25. (Original) The actuator system of claim 24 installed in a flusher wherein said object sensor is constructed to detect a user leaving the flusher's vicinity.

26. (Original) The actuator system of claim 24 wherein said actuator includes a permanent magnet arranged to form a latching actuator.

27. (Original) The actuator system of claim 24 wherein said actuator includes a bias spring positioned and arranged to bias said armature toward its extended position.

28. (Original) The actuator system of claim 24 wherein said armature sensor is a sound sensor coupled to a housing of said actuator.

29. (Presently Amended) The actuator system of claim 24 wherein said armature sensor is a sound sensor arranged to sense sound made by said armature reaching an end position.

30. (Presently Amended) The actuator system of claim 24 wherein said actuator is non-latching, wherein said control circuit is constructed to apply said coil drive to displace said armature to an end position from a rest position, and wherein said actuator includes a bias spring biased and arranged to return said armature to said rest position in the absence of said coil drive.

31. (Presently Amended) The actuator system of claim 30 wherein said control circuit is constructed to apply said coil drive initially at a first level and subsequently in response to said output from said armature sensor apply said coil drive at a second level.

32. (Original) The actuator system of claim 31 wherein said output from said sensor indicates said end position of said armature, and wherein said second level is smaller than said first level but great enough to keep said armature in said end position.

33. (Original) The actuator system of claim 31 wherein said output from said sensor indicates said armature not reaching said end position, and wherein said second level is larger than said first level.

34. (Original) The actuator system of claim 24 wherein said actuator is constructed as a latching actuator including a bias spring positioned and arranged to bias said armature toward its extended position and a permanent magnet arranged to hold said armature in a retracted position, wherein said control circuit is constructed apply said coil drive to displace said armature, and wherein said control circuit is constructed to remove said coil drive in response to said output from said sensor.

35. (Original) The actuator system of claim 24 wherein said actuator is constructed as a latching actuator including a bias spring positioned and arranged to bias said armature toward its extended position and a permanent magnet arranged to hold said armature in a retracted position, wherein said control circuit is constructed apply said coil drive of a first level to displace said

armature, and wherein said control circuit is constructed to apply said coil drive of a second level in response to said output from said sensor.

36. (Original) The actuator system of claim 35 wherein said sensor indicates no motion of said armature and said second level of said coil drive being larger than said first level of said coil drive.

37. (Presently Amended) A battery-operated actuator system, comprising:
an actuator including an armature and a coil constructed to displace said armature by application of a coil drive; said actuator including a permanent magnet arranged to form a latching actuator,

a control circuit powered by a battery;

an armature sensor, powered by said battery, constructed to detect displacement of said armature and provide an output signal to said control circuit; and

an external object sensor, powered by said battery, constructed to provide an object sensor output to said control circuit in response to an external user; [[, wherein]]

said control circuit including a valve driver powered by said battery and [[is]]
constructed to apply to said coil said coil drive upon receiving said object sensor output originated from said object sensor or upon receiving said output from said armature sensor, and wherein said control circuit is constructed to generate said coil drive including different power levels based upon said output from said armature sensor.

38. (Original) The battery-operated actuator system of claim 37 installed in a flusher wherein said object sensor is constructed to detect a user leaving the flusher's vicinity.

Claim 39 cancelled

40. (Original) The battery-operated actuator system of claim 38 wherein said actuator includes a bias spring positioned and arranged to bias said armature toward its extended position.

41. (Original) The battery-operated actuator system of claim 38 wherein said armature sensor is a sound sensor coupled to a housing of said actuator.

42. (Original) The battery-operated actuator system of claim 38 wherein said armature sensor is a sound sensor arranged to sense sound made by said armature reaching an end position.

43. (Original) The battery-operated actuator system of claim 38 wherein said actuator is non-latching, wherein said control circuit is constructed apply said coil drive to displace said armature to an end position from a rest position, and wherein said actuator includes a bias spring biased and arranged to return said armature to said rest position in the absence of said coil drive.